

variable  $x$ ; but the three angular velocities are equivalent to a single angular velocity, and then, as we see in article 4, we shall have  $\frac{dp}{dx}$  involving also  $y$  and  $z$ .

6. The problem which Dahlander discusses is in reality much simpler than his enunciation implies; it amounts to this: investigate the conditions under which a fluid will be in equilibrium in the form of an ellipsoid, when, besides the attraction of the fluid, there are forces parallel to the principal axes, which may be denoted by  $fx$ ,  $gy$ ,  $hz$  respectively. Traces of such a problem appear in other places—as, for example, in Lagrange's '*Mécanique Analytique*,' première partie, Sect. VII. This is, however, different from the problem of *rotating* fluid, which it was proposed to discuss.

7. There is nothing to call for remark in the mathematical work of the memoir, except that a wrong value is assigned to the definite integral

$$\int_0^1 \frac{(1-u^2)u^2 du}{(1+\lambda^2 u^2)^{\frac{3}{2}}}. \quad \text{The correct value is}$$

$$\frac{3+2\lambda^2}{2\lambda^5} \log \{\lambda + \sqrt{(1+\lambda^2)}\} - \frac{3\sqrt{(1+\lambda^2)}}{2\lambda^4}.$$

October 24, 1872.

### III. Additional Note to the Paper "On a supposed Alteration in the Amount of Astronomical Aberration of Light produced by the Passage of the Light through a considerable thickness of Refracting Medium." By the PRESIDENT. Received November 2, 1872.

Some months since I communicated to the Royal Society the result of observations on  $\gamma$  Draconis made with the water-telescope of the Royal Observatory (constructed expressly for testing the equality of the coefficient of sidereal aberration, whether the tube of a telescope be filled with air, as usual, or with water) in the spring and autumn of 1871. Similar observations have been made in the spring and autumn of 1872, and I now place before the Society the collected results. It will be remembered, from the explanation in the former paper, that the uniformity of results for the latitude of station necessarily proves the correctness of the coefficient of aberration employed in the Nautical Almanac.

#### *Apparent Latitude of Station.*

1871. Spring .....	51° 28' 34".4
Autumn .....	51 28 33.6
1872. Spring .....	51 28 33.6
Autumn .....	51 28 33.8

I now propose, when the risk of frost shall have passed away, to reverify the scale of the micrometer, and then to dismount the instrument.